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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,152	02/08/2001	Susan L. Acton	MNI-172CP2	4228

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EXAMINER
CHAKRABARTI, ARUN K

ART UNIT	PAPER NUMBER
1634	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)	
09/779152	Acton, S.	
Examiner	Group Art Unit	
Chakrabarti, A.	1634	

---The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address---

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 6-24-02.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-22, 34-38 is/are pending in the application.

Of the above claim(s)____ is/are withdrawn from consideration.

☐ Claim(s)____ is/are allowed.

☒ Claim(s) 1-22, 34-38 is/are rejected.

☐ Claim(s)____ is/are objected to.

☐ Claim(s)____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number)____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received:____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s).____

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☒ Other Detailed Action

Office Action Summary

DETAILED ACTION

Specification

1. Claims 1-20 and 22 have been amended.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CAR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CAR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CAR 3.73(b).

3. Claims 1-22 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-11, and 30-51 of U.S. Patent No. 6,228,581 B1 (May 8, 2001). Although the conflicting claims are not identical, they are not patentably distinct from each other because U.S. Patent 6,228,581 B1 clearly teaches a method for determining whether a male subject has, or is at risk of developing, an abnormally low HDL level. The male subject species as claimed in U.S. Patent 6,228,581 B1 anticipates the genus subject of the instant claimed invention. Moreover, the SR-B1gene that is associated with high HDL level as

claimed in U.S. Patent 6,228,581 B1 obviously and automatically indicates the status of the SR-B1gene that is associated with low HDL level.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-22 and 34-38 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-22 and 34-38 are rejected under 35 U.S.C. 112, first paragraph, because the specification, does not reasonably provide enablement for the method of determining risk of developing an abnormally low HDL level in any subject associated with the polymorphic region of the SR-B1 gene. Claims 34-38 are rejected because the specification, does not reasonably provide enablement for the method of predicting the effect of hormone replacement therapy on the HDL level in a female subject associated with the allelic variants of the SR-B1 gene. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The Court in re Wands, 8 USPQ2d 1400 (CA FC 1988) stated with regard to enablement that

"Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in Ex parte Forman. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

Here, the claim is broadly drawn to method of determining risk of developing an abnormally low HDL level in any subject associated with the polymorphic region of the SR-B1 gene and the method of predicting the effect of hormone replacement therapy on the HDL level in a female subject associated with the allelic variants of the SR-B1 gene. The specification provides minimal guidance regarding methods for the identification of alternate methodology of any risk factor (abnormal HDL levels) in any subjects of any animal species (including human) associated with the presence of allelic variant of SR-B1 gene other than haplotypes 111, 112, 121, 211, 212, and 221 of three human populations named as ASHKENAZI, FINNISH, and SEDISH. There is no working example of any hormone treatment or drug trial and its efficacy in any patients of any animal species (including human) associated with the presence of allelic variant of SR-B1 gene. It is highly unpredictable whether or what other treatments would function in the context of highly variant alleles of SR-B1 genes in different human population

and different animal species. It is therefore highly unpredictable whether other diagnostic strategies can be identified which meets this specific criteria regarding the method of determining risk of developing an abnormally low HDL level in any subject associated with the polymorphic region of the SR-B1 gene and the method of predicting the effect of hormone replacement therapy on the HDL level in a female subject associated with the allelic variants of the SR-B1 gene. Further, hormone treatment regiment will be by the trial and error method. This trial and error requirement is borne out because effects of hormone therapy on any disease in any patients of any animal species (including human) associated with the presence of polymorphism cannot be readily deduced, even where the metabolic pathways are known. Further, each disease in any patients of any animal species (including human) associated with the presence of polymorphism has unpredictable effects on metabolic function, and no general method for a priori selection of diagnosis and hormone treatment is presented. It would require a large amount of experimentation, potentially including the synthesis of billions of chemicals (as only human genome consists of 60,000-100,000 polymorphic or variable sites), in order to identify additional metabolic pathways with the claimed functionality. Given the Wand's factors opposing the full scope of enablement including the limited teaching in the specification, the presence of only two hypothetical examples, the teaching of unpredictability in the prior art, the unpredictability of the art, the breadth of the claim, and the large amount of experimentation needed, with only the skill level in the art being neutral towards enablement, it is concluded that undue experimentation is necessary to make and use the invention as broadly claimed.

6. Claims 1-22, and 34-38 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification discloses only six haplotypes which corresponds to the cDNA/genomic DNA encoding the human species associated with the LDL or HDL polymorphism. Claims 1-22, and 34-38 are directed to encompass all gene sequences, sequences that are polymorphic region of the SR-B1 gene corresponding sequences from other species, mutated sequences, allelic variants, splice variants, sequences that have a recited degree of identity (similarity, homology), and so forth. None of these sequences meet the written description provision of 35 USC 112, first paragraph. The specification provides insufficient written description to support the genus encompassed by the claim.

Vas-Cath Inc. v. Mahurkar, 19 USPQ2d 1111, makes clear that "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention.* The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See Vas-Cath at page 1116.)

With the exception of haplotypes 111, 112, 121, 211, 212, and 221, the skilled artisan cannot envision the detailed chemical structure of the encompassed polynucleotides and/or proteins,

regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. The nucleic acid itself is required. See Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Ltd., 18 USPQ2d 1016. In Fiddes v. Baird, 30 USPQ2d 1481, 1483, claims directed to mammalian FGF's were found unpatentable due to lack of written description for the broad class. The specification provided only the bovine sequence.

Finally, University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1404, 1405 held that:

> ...To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that "the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.* , 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (1997); *In re Gosteli* , 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) (" [T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed."). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams,

formulas, etc., that set forth the claimed invention." *Lockwood* , 107 F.3d at 1572, 41 USPQ2d at 1966.

Therefore, only haplotypes 111, 112, 121, 211, 212, and 221 but not the full breadth of the claim (or none of the sequences encompassed by the claim) meets the written description provision of 35 USC 112, first paragraph. The species specifically disclosed are not representative of the genus because the genus is highly variant. Applicant is reminded that Vas-Cath makes clear that the written description provision of 35 USC 112 is severable from its enablement provision. (See page 1115.).

Response to Amendment

7. In response to amendment, 112 (second paragraph) rejections are hereby withdrawn. However, double patenting rejection is hereby maintained in absence of a terminal disclaimer. Rejections under 112 (first paragraph) corresponding to both enablement and written description are hereby maintained with a minor modification.

Response to Arguments

8. Applicant's arguments filed on July 24, 2002 have been fully considered but they are not persuasive. .

Applicant argued that rejections under 112 (first paragraph) corresponding to both enablement and written description should be withdrawn in view of the fact that the specification discloses the association of low HDL level with SR-B1 polymorphisms in females and males in Example 6 and Table III. This argument is not persuasive. The applicant did not provide any argument for the absence of any working example of any hormone treatment or drug trial and its efficacy in any patients of any animal species (including human) associated with the presence of allelic variant of SR-B1 gene and the absence of methods for the identification of alternate methodology of any risk factor (abnormal HDL levels) in any subjects of any animal species (including human) associated with the presence of allelic variant of SR-B1 gene other than haplotypes 111, 112, 121, 211, 212, and 221 of three human populations named as ASHKENAZI, FINNISH, and SEDISH. Applicant is also silent on the issue of written description especially the lack of written description other than only haplotypes 111, 112, 121, 211, 212, and 221, whereas the claims are directed to encompass all gene sequences, sequences that are polymorphic region of the SR-B1 gene corresponding sequences from other species, mutated sequences, allelic variants, splice variants, sequences that have a recited degree of identity (similarity, homology), and so forth. None of these sequences meet the written description provision of 35 USC 112, first paragraph.

In view of the response to amendment, all previous rejections are hereby maintained.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph.D. whose telephone number is (703) 306-5818. The examiner can normally be reached on 7:00 AM-4:30 PM from Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-7401. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group analyst Chantae Dessau whose telephone number is (703) 308-0196.

Arun Chakrabarti,

Patent Examiner,

July 11, 2002

W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600